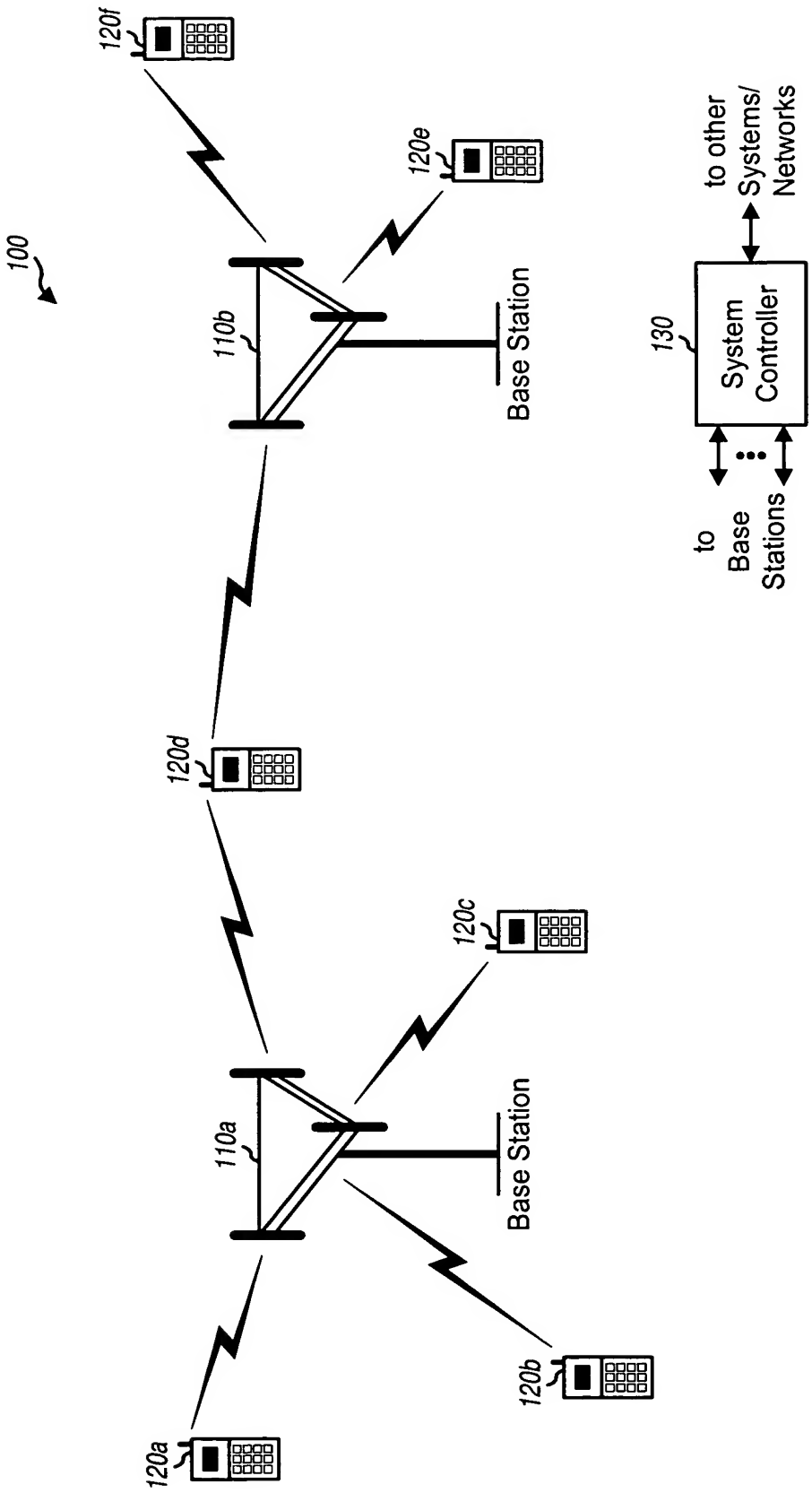
100
120f
120e
110b
Base Station
120d
120c
110a
Base Station
120b
120a
130
System Controller
to other Systems/ Networks
to Base Stations

FIG. 1

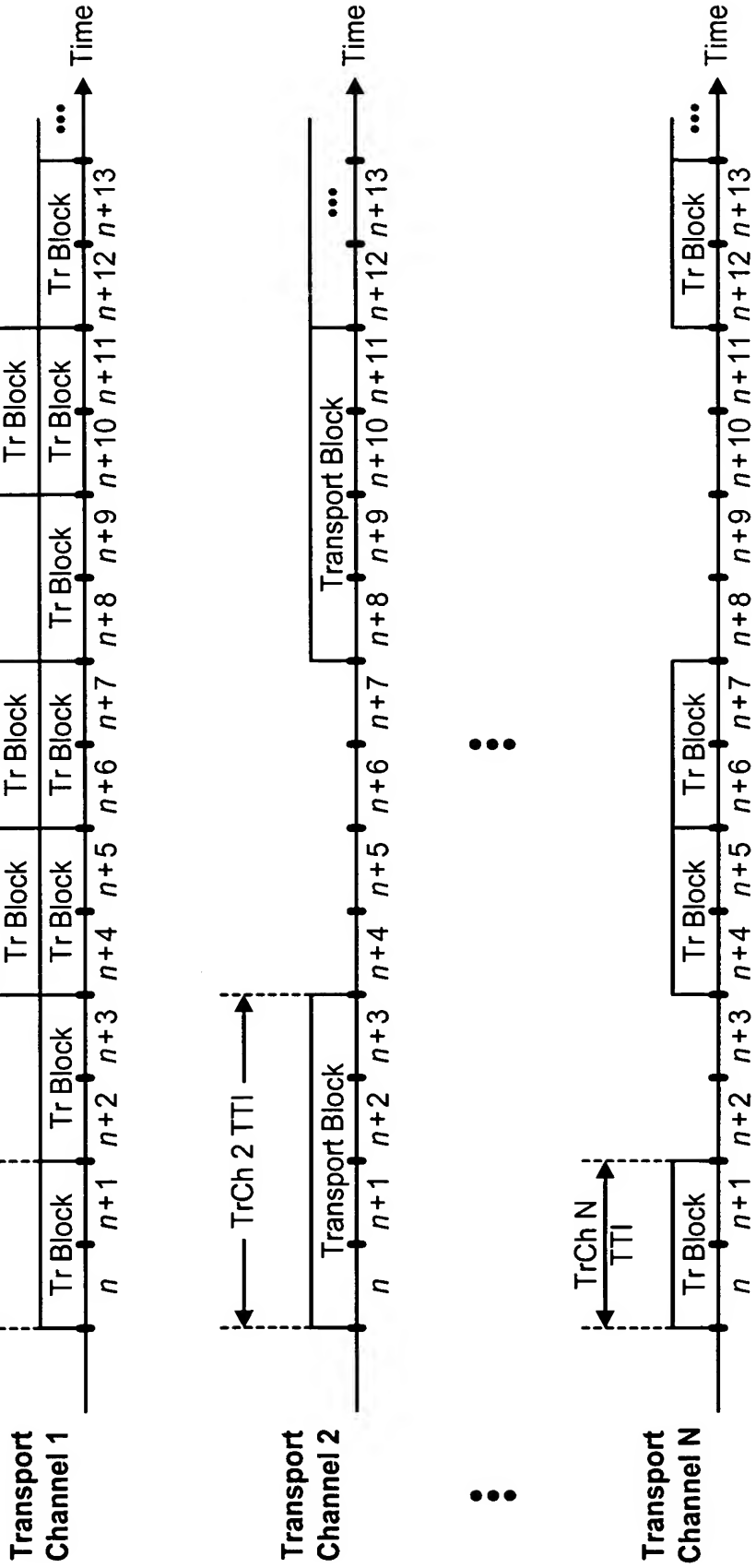
Transport Channel 1
TrCh 1
TTI
Tr Block
Time
n
n+1
n+2
n+3
n+4
n+5
n+6
n+7
n+8
n+9
n+10
n+11
n+12
n+13
Transport Channel 2
TrCh 2 TTI
Transport Block
Transport Channel N
TrCh N
TTI

FIG. 2

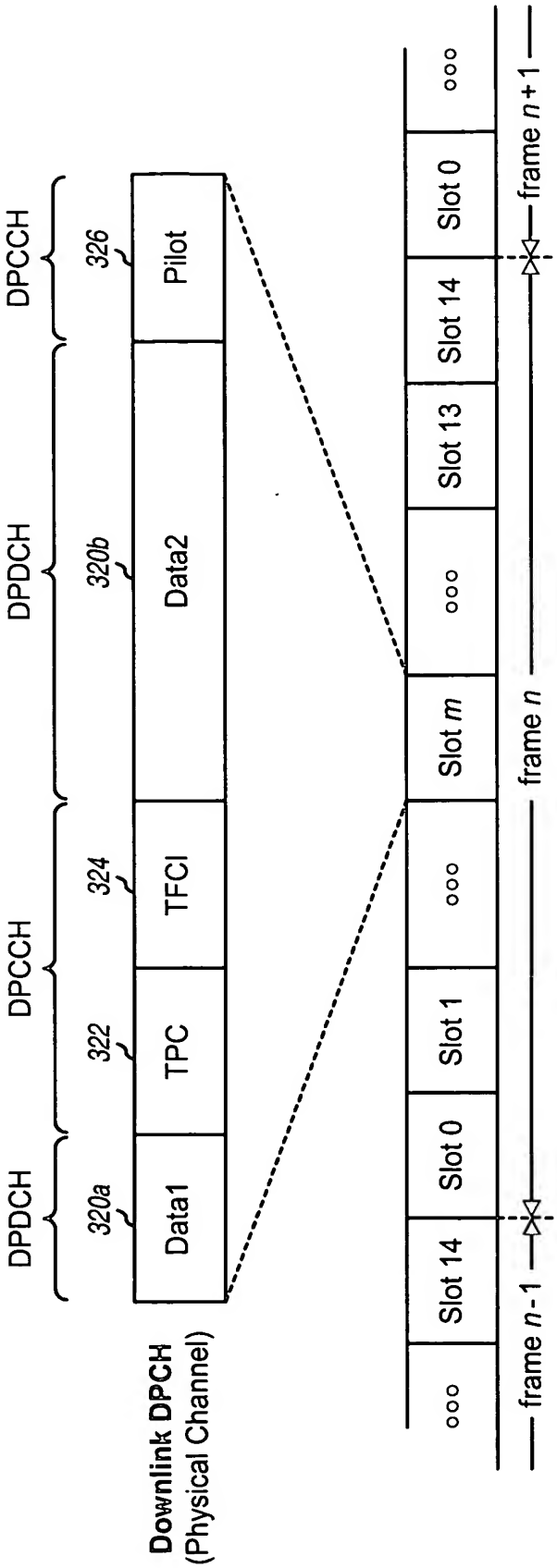
DPDCH
DPCCH
DPDCH
DPCCH
DPDCH
DPCCH
320a
322
320b
324
326
Data1
TPC
Data2
TFCI
Pilot
Downlink DPCH
(Physical Channel)
Slot 14
Slot 0
Slot 1
Slot m
Slot 13
Slot 14
Slot 0
frame n-1
frame n
frame n+1

FIG. 3

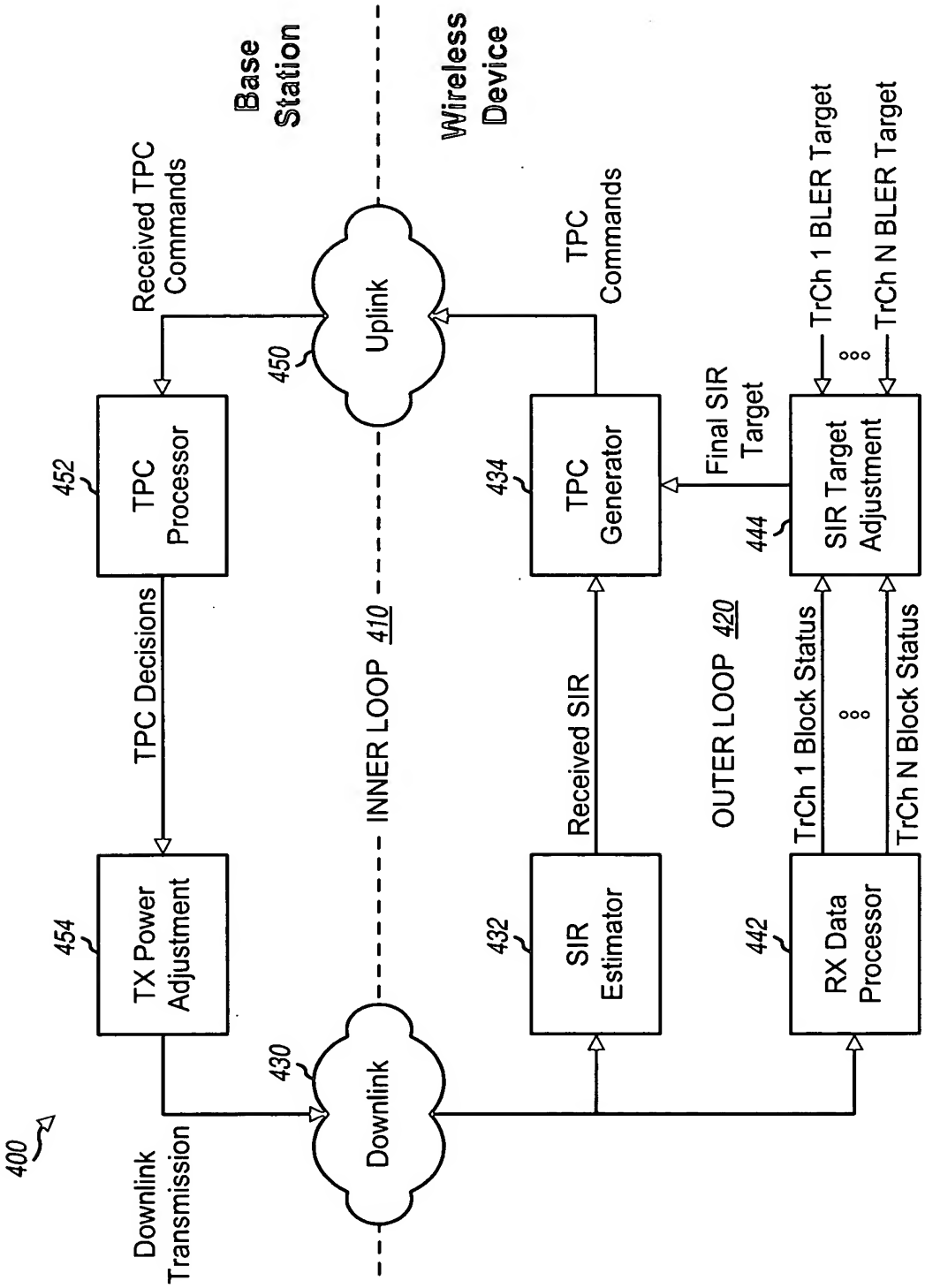
400
Downlink Transmission
454
TX Power Adjustment
TPC Decisions
452
TPC Processor
Received TPC Commands
Base Station
Wireless Device
INNER LOOP 410
OUTER LOOP 420
430
Downlink
450
Uplink
432
SIR Estimator
Received SIR
434
TPC Generator
TPC Commands
442
RX Data Processor
TrCh 1 Block Status
TrCh N Block Status
444
SIR Target Adjustment
Final SIR Target
TrCh 1 BLER Target
TrCh N BLER Target

FIG. 4

500

Transport Channel	SIR Target	ΔDN_i	Dormant Flag	Inactive Time	Last SIR Target
1	0.7	0.1	F	3	-
2	-	0.05	T	11	2.5
⋮	⋮	⋮	⋮	⋮	⋮
N	3.5	0.05	F	1	-

FIG. 5

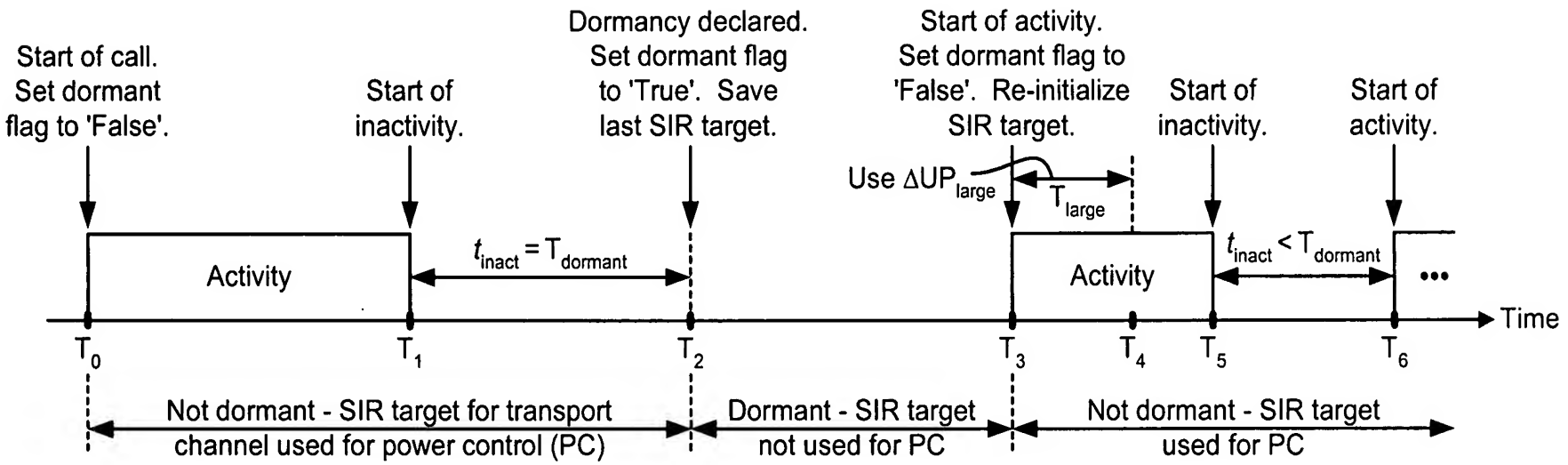

FIG. 6

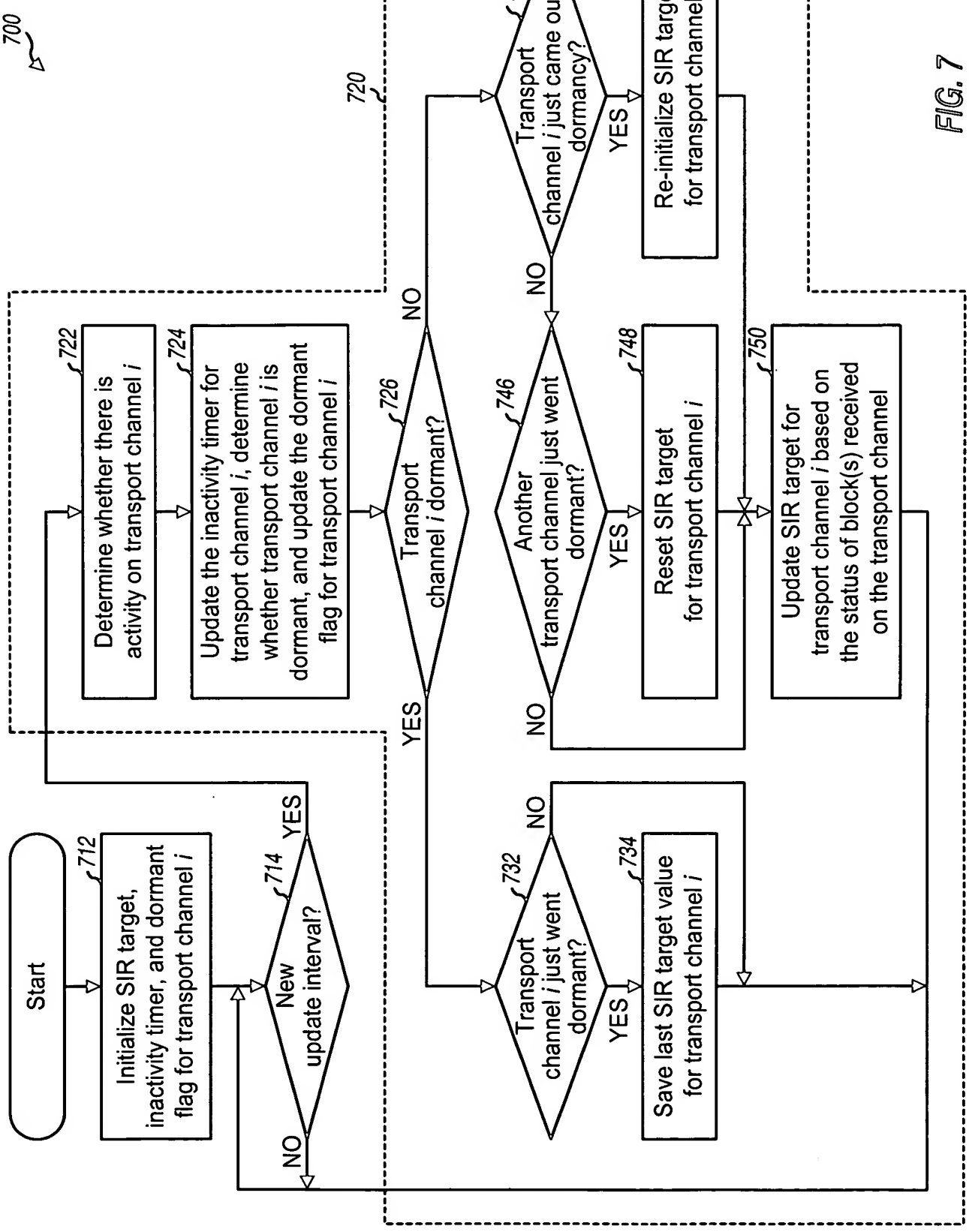
700
720
Start
712
Initialize SIR target, inactivity timer, and dormant flag for transport channel i
714
New update interval?
YES
NO
722
Determine whether there is activity on transport channel i
724
Update the inactivity timer for transport channel i, determine whether transport channel i is dormant, and update the dormant flag for transport channel i
726
Transport channel i dormant?
NO
YES
732
Transport channel i just went dormant?
NO
YES
734
Save last SIR target value for transport channel i
742
Transport channel i just came out of dormancy?
YES
NO
744
Re-initialize SIR target for transport channel i
746
Another transport channel just went dormant?
YES
NO
748
Reset SIR target for transport channel i
750
Update SIR target for transport channel i based on the status of block(s) received on the transport channel

FIG. 7

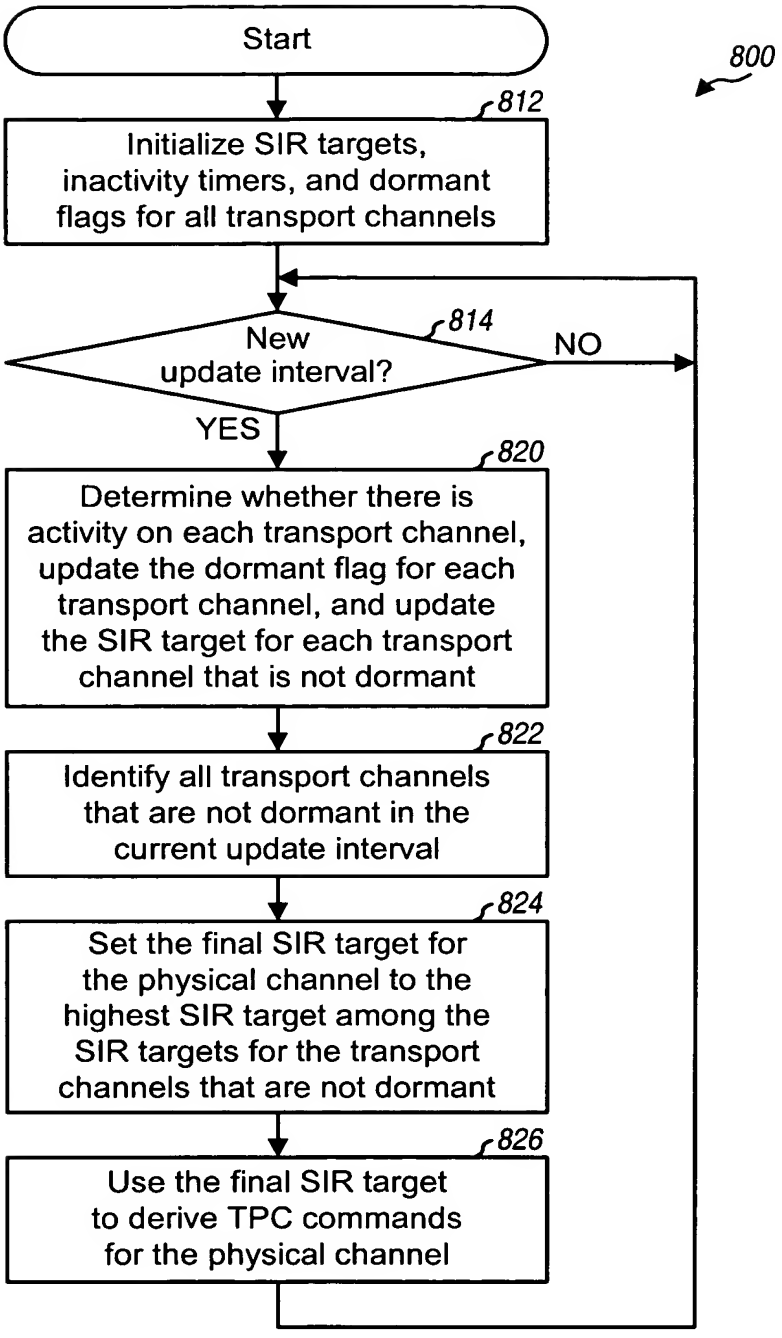
Start
800
812
Initialize SIR targets, inactivity timers, and dormant flags for all transport channels
814
New update interval?
NO
YES
820
Determine whether there is activity on each transport channel, update the dormant flag for each transport channel, and update the SIR target for each transport channel that is not dormant
822
Identify all transport channels that are not dormant in the current update interval
824
Set the final SIR target for the physical channel to the highest SIR target among the SIR targets for the transport channels that are not dormant
826
Use the final SIR target to derive TPC commands for the physical channel

FIG. 8

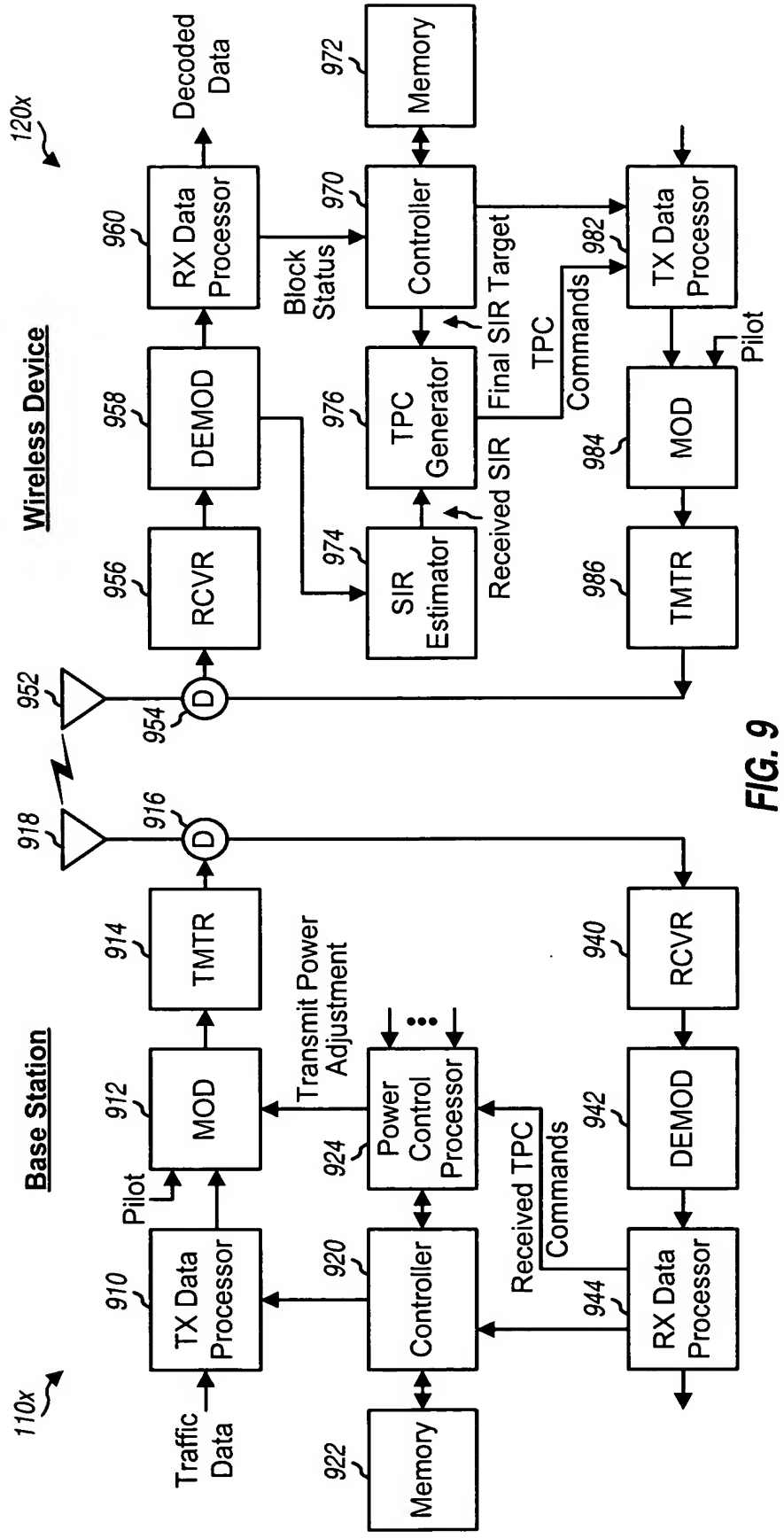
110x
Base Station
120x
Wireless Device
Traffic Data
TX Data Processor
910
Pilot
MOD
912
TMTR
914
Transmit Power Adjustment
Power Control Processor
924
Controller
920
Memory
922
Received TPC Commands
RX Data Processor
944
DEMOD
942
RCVR
940
TX Data Processor
982
MOD
984
TMTR
986
Pilot
Commands
TPC
Final SIR Target
TPC Generator
976
Controller
970
Memory
972
Received SIR
SIR Estimator
974
Block Status
RX Data Processor
960
Decoded Data
DEMOD
958
RCVR
956
D
954
952
D
916
918

FIG. 9